

REMARKS

The Office Action of June 26, 2008 has been carefully studied. The claims at issue are now 1-16, with claims 11-17 being newly added. Claim 11 and 12 are the same as claim 7 but are dependent on claims 9 and 10, respectively. Claims 13 and 14 are the same as claim 8 but are dependent on claims 9 and 10 respectively. Claims 15 and 16 focus on the physical form of the catalyst, support being found on p. 13, lines 5-7 of the specification. Claim 17 utilizes the language "consisting of" in describing the steps of the process.

No claims have yet to be allowed.

The following paragraphs correspond to the order of the paragraphs of the Office Action:

Claimed Objections

The Examiner is thanked for noting that the semicolon in line 6 after NFI should be a comma -- which is now corrected.

Claim Rejections – 35 U.S.C. §103

Before discussing the cited reference Ladwig, et al. U.S. 6,093,867, Applicants respectfully point to Applicants' specification on p. 4, lines 17-25 wherein European Patent Application No. EP-A-1-1195424 is discussed. Incidentally, it is noted that in Applicants' Information Disclosure Statement reviewed by the Examiner, the foreign references were crossed off indicating that the Examiner has not reviewed same, but it would be appreciated if the Examiner were to advise counsel if these references were received, noting in particular that EP 1195424 is in the English language. This EP patent corresponds to recently issued U.S. Patent No. 7,375,257 (May 20, 2008), and is stated to be the closest prior art to the present invention inasmuch as it involves the use of a moving bed as well as an MFI or MEL type zeolitic catalyst. The Si/Al ratios of these catalysts are 180 - 1,000 or 150 - 800, respectively.

In contrast, Applicants, have unexpectedly discovered that an improved process is possible by merely modifying the nature of the zeolitic catalyst to provide an Si/Al ratio of

40 – 130. As stated in Applicants' specification in the sentence bridging pages 4 and 5, Applicants process results in a higher conversion and yield, but with a smaller catalytic volume due to the use of a the catalyst and a typically increased space velocity. Such space velocities are now set forth in claims 7, 8 and 11-14. Also, in the present specification, it is pointed out that on pages 1 - 3 that fluidized bed (FCC) processes have been used in the prior art, but as stated on page 3, lines 19-21, such technology is expensive from the point of view of investment and is quite difficult to control, thereby resulting in substantial loss of catalysts by wear.

In the Office Action, claims 1 – 10 stand rejected over Ladwig, et al. 6,093,867. Applicants have studied this reference and respectfully contend that the teachings therein would not render Applicants' invention obvious, for the reasons outlined below:

Ladwig, et al.

This reference discloses a process for selectively producing C3 olefins from a naphtha feed stream in a process unit comprised of a reaction zone, a stripping zone, a catalyst regeneration and a fractionation zone. The details of this process unit are described on column 3, lines 16 – 50. The only type of reaction zone mentioned in the reference is a fluidized reaction zone, noting column 3, line 62, which refers to "the total fluidized catalyst composition" and claim 1, line 7, which refers to "the reaction zone containing a fluidized bed of catalysts." There is certainly no mention of the use of a moving bed of catalyst.

There are major distinctions between fluidized bed processes and moving bed processes. For example, the reference on column 5, lines 6 – 8, states that it is preferred that the naphtha residence time in the reaction zone be less than about 10 seconds, for example, about 1 – 10 seconds. In Applicants' moving bed process which is much easier to control and in the final analysis leads to less catalyst loss, the overall space velocity HSV is in the range of 13 – 80 (preferably 33 – 60h⁻¹) which according to counsel's calculation is equivalent to a residence time of 45 seconds – 277 seconds. The residence times of the solids in a moving bed process are counted in hours. Accordingly, in the absence of Applicants' invention, there would certainly be no motivation to convert the fluidized bed process of Ladwig to a moving bed process. It would have flown in the face of common sense to do so, much less realize an

unexpected improvement

Finally, it is seen that new claim 17 is the same as claim 1 except that the restrictive language “consisting of” is used to define the steps of the process, thereby omitting the stripping zone which is a key step in the Ladwig, et al. process. This new claim is a back-up claim since Applicants respectfully reiterate that Applicants’ moving bed process which is an improvement over the most relevant prior art Dath U.S. Patent No. 7,375,257, would not have been obvious to one of ordinary skill in the art in the absence of Applicants’ disclosure.

In the recent KSR decision, the Supreme Court has warned against the temptation to used hindsight based on the disclosure of an invention in order to attempt to deny it’s patentability.

In view of the above remarks, favorable reconsideration is courteously requested. If, however, there are any residual issues which can be expeditiously resolved by telephone conference, the Examiner is courtesy invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,
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Date: September 26, 2008

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